

FORM PTO-1449

ATTY. E. NO.
195/036SERIAL NO. 436 657
07/965,411LIST OF PATENTS AND OTHER ITEMS FOR APPLICANT'S
INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

APPLICANT:
Fritz Eckstein et al.FILING DATE:
August 9, 1993

GROUP

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER							DATE	NAME	CLASS	SUB CLASS	FILING DATE
1	AA	5	2	9	8	6	1	2	03/29/94	Jennings et al.	536	23.2	
	AB	5	1	4	9	7	9	6	09/22/95	Rossi et al.	536	23.2	
	AC	5	3	3	4	7	1	1	08/02/94	Sproat et al.	536	24.5	

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER							DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION	
													YES	NO
1	AD	0	3	8	7	7	7	5	19.09.90	EPA (Beug et al.)				
	AE	8	8	0	4	3	0	0	16.06.88	WO/PCT (Cech et al.)				
	AF	9	2	0	7	0	6	5	30.04.92	WO/PCT (Eckstein et al.)				
	AG	0	3	2	1	2	0	1	21.12.94	EPA (Gerlach et al.)				
	AH	9	1	0	3	1	6	2	21.03.91	WO/PCT (Rossi et al.)				

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

1	AI	Baer et al., "Structure and Function of Bacterial RNase P," <u>Nucleic Acids and Molecular Biology</u> , Vol. 3, pp. 231-250, Eckstein and Lilley eds, Springer Verlag, Berlin/Heidelberg (1988)
	AJ	Bass and Cech, "Ribozyme Inhibitors: Deoxyguanosine and Dideoxyguanosine are Competitive Inhibitors of Self-Splicing of the <u>Tetrahymena</u> Ribosomal Ribonucleic Acid Precursor," <u>Biochemistry</u> 25:4473-4477 (1986)
	AK	Been and Cech, "One Binding Site Determines Sequence Specificity of Tetrahymena Pre-rRNA Self-Splicing, Trans-Splicing and RNA Enzyme Activity," <u>Cell</u> 47:207-216 (1986)
	AL	Black et al., "The Antiviral Activity of Certain Thiophosphate and 2'-Chloro Substituted Polynucleotide Homopolymer Duplexes," <u>Virology</u> 48:537-545 (1972)
	AM	Cameron and Jennings, "Specific Gene Expression by Engineered Ribozymes in Monkey Cells," <u>Proc. Natl. Acad. Sci. USA</u> 86:9139-9143 (1989)
	AN	Cech, "A Model for the RNA-Catalyzed Replication of RNA," <u>Proc. Natl. Acad. Sci. USA</u> , 83: 4360-4363 (1986)
	AO	Cech, "RNA as an Enzyme," <u>Scientific American</u> 255:76-84 (1986)
	AP	Cech, "The Chemistry of Self-Splicing RNA and RNA Enzymes," <u>Science</u> 236:1532-1539 (1987)
	AQ	Cech, "Self-Splicing of Group I Introns," <u>Ann. Rev. Biochem.</u> 59:543-568 (1990)
	AR	Cedergren et al., "Catalytic RNA as an Anti-HIV Agent: Design and Delivery to Cells," <u>Abstract NIH Conference</u> October 21-24 1990, San Diego, California
	AS	Cedergren et al., Abstract presentation at Cold Spring Harbor meeting: RNA Processing, May 15-19, 1991
	AT	Cedergren et al., Abstract presentation at Cold Spring Harbor meeting: RNA Processing, May 16-20, 1990

EXAMINER: JOHN L. GUYADER
PRIMARY EXAMINER
GROUP 1800
1000

DATE CONSIDERED: 3/25/98

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FORM PTO-1449 LIST OF PATENTS AND OTHER ITEMS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	ATTY. Docket NO. 195/036	SERIAL NO. 07965,ATT 93667
	APPLICANT: Fritz Eckstein et al.	
	FILING DATE: August 9, 1993	GROUP:

12	AU	Chowrira et al., "Four Ribose 2'-Hydroxyl Groups Essential for Catalytic Function of the Hairpin Ribozyme," <u>J. Biol. Chem.</u> 268:19458-19462 (1993)
	AV	Chowrira and Burke, "Binding and Cleavage of Nucleic Acids by the "Hairpin" Ribozyme," <u>Biochemistry</u> 30:8518 (1991)
	AW	Codington et al., "Nucleosides. XVIII. Synthesis of 2'-Fluorothymidine, 2'-Fluorodeoxyuridine, and Other 2'-Halogeno-2'-Deoxy Nucleosides," <u>J. Org. Chem.</u> 29:558-567 (1964)
	AX	Cotten, "The in vivo application of ribozymes," <u>TIBS</u> 8:174-178 (1990)
	AY	Cotten et al., "Ribozyme, Antisense RNA, and Antisense DNA Inhibition of U7 Small Nuclear Ribonucleoprotein-Mediated Histone Pre-mRNA Processing In Vitro," <u>Mol. Cell. Biol.</u> 9:4479-4487 (1989)
	AZ	Doerr and Fox, "Nucleosides. XXXIX. 2'-Deoxy-2'-fluorocytidine, 1-β-D-Arabinofuranosyl-2-amino-1,4(2H)-4-iminopyrimidine, and Related Derivatives," <u>J. Org. Chem.</u> 32:1462-1471 (1976)
	BA	Doudna et al., "A Multisubunit that is a Catalyst of and Template for Complementary Strand RNA Synthesis," <u>Science</u> 251:1605 (1991)
	BB	Ellington and Szostak, "In Vitro selection of RNA molecules that bind specific ligands," <u>Nature</u> 346:818-822 (1990)
	BC	Egli et al., "Crystal Structure of an Okazaki Fragment at 2-A Resolution," <u>Proc. Natl. Acad. Sci. USA</u> 89:534-538 (1992)
	BD	Fedor and Uhlenbeck, "Substrate sequence effects on "hammerhead" RNA catalytic efficiency," <u>Proc. Natl. Acad. Sci. USA</u> 87:1668-1672 (1990)
	BE	Greider and Blackburn, "A telomeric sequence in the RNA of <i>Tetrahymena</i> telomerase required for telomere repeat synthesis," <u>Nature</u> 337:331-337 (1989)
	BF	Hampel et al., "'Hairpin' Catalytic RNA Model: Evidence for Helices and Sequence Requirement for Substrate RNA," <u>Nucleic Acids Research</u> 18:299-304 (1990)
	BG	Haseloff and Gerlach, "Simple RNA Enzymes with New and Highly Specific Endoribonuclease Activities," <u>Nature</u> 334:585-591 (1988)
	BH	Herschlag and Cech, "DNA cleavage catalysed by the ribozyme from <i>Tetrahymena</i> ," <u>Nature</u> 344:405-409 (1990)
	BI	Hobbs et al., "Polynucleotides Containing 2'-Chloro-2'-deoxyribose," <u>Biochemistry</u> 11:43367-4334 (1972)
	BJ	Hobbs et al., "Polynucleotides Containing 2'-Amino-2'-deoxyribose and 2'-Azido-2'-deoxyribose," <u>Biochemistry</u> 12:5138-5145 (1973)
	BK	Hutchins et al., "Self-cleavage of Plus and Minus RNA Transcripts of Avocado Sunblotch Viroid," <u>Nucleic Acids Research</u> 14:3627-3640 (1986)
	BL	Ikehara and Miki, "Studies of Nucleosides and Nucleotides. LXXXII. Cyclonucleosides. (39). Synthesis and Properties of 2'-Halogeno-2'-deoxyadenosines," <u>Chem. Pharm. Bull.</u> 26:2449-2453 (1978)
	BM	Imazawa and Eckstein, "Facile Synthesis of 2'-Amino-2'-deoxyribofuranosyl Purines," <u>J. Org. Chem.</u> 44:2039-2041 (1979)
	BN	Ludwig, "A New Route to Nucleoside 5'-Triphosphates," <u>Acta Biochim. Biophys. Acad. Sci. Hung.</u> 16:131-133 (1981)
V	BO	Ludwig and Eckstein, "Rapid and Efficient Synthesis of Nucleoside 5'-O-(1-Thiotriphosphates), 5'-Triphosphates and 2',3'-Cyclophosphorothioates Using 2-Chloro-4H-1,3,2-Benzodioxaphosphorin-4-one," <u>J. Org. Chem.</u> 54:631-635 (1989)

EXAMINER: JOHN L. LeGUYADER PRIMARY EXAMINER GROUP 1800 1600	DATE CONSIDERED: 3/25/98
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FORM PTO-1449 LIST OF PATENTS AND OTHER ITEMS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	ATTY. D. NO. 195/036	SERIAL NO. 07/963,411 <i>73657</i>
	APPLICANT: Fritz Eckstein et al.	
	FILING DATE: August 9, 1993	GROUP:

BP	Mengel and Guschlbauer, "Einfache Umwandlung von 2,2'-Anhydrocytidin in 2'-Desoxy-2'-fluorcytidin durch nucleophile Substitution mit Kaliumfluorid/Kronenether," <u>Ang. Chem.</u> 90:557-558 (1979)
BQ	Mungall et al., "Use of the Azido Group in the Synthesis of 5' Terminal Aminodeoxythymidine Oligonucleotides," <u>J. Org. Chem.</u> 40:1659-1662 (1975)
BR	Nielsen et al., "Sequence-Selective Recognition of DNA by Strand Displacement with a Thymine-Substituted Polyamide," <u>Science</u> 254:1497 (1991)
BS	Paoella et al., "Nuclease Resistant Ribozymes with High Catalytic Activity," <u>EBMO J.</u> 11:1913-1919 (1992)
BT	Perreault et al., "Mixed Deoxyribo- and Ribo-Oligonucleotides with Catalytic Activity," <u>Nature</u> 344:565-567 (1990)
BU	Perreault et al., "Relationship between 2'-Hydroxyls and Magnesium Binding in the Hammerhead RNA Domain: A Model for Ribozyme Catalysis," <u>Biochemistry</u> 30:4020-4025 (1991)
BV	Pieken et al., "Kinetic Characterization of Ribonuclease-Resistant 2'-Modified Hammerhead Ribozymes," <u>Science</u> 253:314-317 (1991)
BW	Pieken et al., "Influence of 2'-Amino and 2'-Fluoro Modifications on the Catalytic Properties of Hammerhead Ribozymes," <u>Abstract of the 14th International tRNA workshop</u> May 4-9, 1991, Rdzyna, Poland
BX	Price and Cech, "Coupling of <i>Tetrahymena</i> Ribosomal RNA Splicing to β -Galactosidase Expression in <i>Escherichia coli</i> ," <u>Science</u> 228:719 (1985)
BY	Rossi and Sarver, "RNA enzymes, ribozymes as antiviral therapeutic agents," <u>TIBTECH</u> 8:179-183 (1990)
BZ	Ruffner et al., "Thiophosphate interference experiments locate phosphates important for the hammerhead RNA self-cleavage reaction," <u>Gene</u> 82:31-41 (1989)
CA	Sarver et al., "Ribozymes as Potential Anti-HIV-1 Therapeutic Agents" <u>Science</u> 247:1222-1225 (1990)
CB	Scaringe et al., "Chemical synthesis of biologically active oligoribonucleotides using β -cyanoethyl protected ribonucleoside phosphoramidites," <u>Nucl Acids Res.</u> 18:5433-5441 (1990)
CC	Sheldon et al., "RNA Self-Cleavage by the Hammerhead Structure," <u>Nucleic Acids and Molecular Biology</u> , Vol. 4., pp. 227-242, eds Eckstein and Lilley, Springer Verlag Berlin Heidelberg (1990)
CD	Sinha et al., "Polymer support oligonucleotide synthesis XVIII ^(1,2) : use of β -cyanoethyl-N,N-dialkylamino/N-morpholino phosphoramidite of deoxynucleosides for the synthesis of DNA fragments simplifying deprotection and isolation of the final product," <u>Nucleic Acids Research</u> 12:4539-4577 (1984)
CE	Strobel and Cech, "Tertiary Interactions with the Internal Guide Sequence Mediate Docking of the P1 Helix into the Catalytic Core of the T. Ribozyme," <u>Biochemistry</u> 32:13593-13604 (1993)
CF	Sung, "Synthesis of 4-(1,2,4-Triazol-1-yl) pyrimidine-2(1H)-one-Ribonucleotide and Its Application in Synthesis of Oligoribonucleotides," <u>J. Org. Chem.</u> 47:3623-3628 (1982)
CG	Symons, "Self-cleavage of RNA in the replication of small pathogens of plants and animals," <u>TIBS</u> 14:445-450 (1989)
CH	Tuerk and Gold, "Systematic Evolution of Ligands by Exponential Enrichment: RNA Ligands to Bacteriophage T4 DNA Polymerase," <u>Science</u> 249:505-510 (1990)
CI	Uchida and Egami, "Microbial Ribonucleases with Special Reference to RNases T ₁ , T ₂ , N ₁ , N ₂ , and U ₂ ," <u>The Enzymes</u> Vol. IV, 3rd ed., pp. 205-250, P.D. Boyer editor, Academic Press (1971)
CJ	Uhlenbeck, "A Small Catalytic Oligoribonucleotide," <u>Nature</u> 328:596-600 (1987)

EXAMINER: JOHN L. LUGUYADER PRIMARY EXAMINER GROUP 1800/600	DATE CONSIDERED: <i>3/25/98</i>
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	APPLICANT: Fritz Eckstein et al.	
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CK	Uhlenbeck, <u>Proc. Natl. Acad. Sci. USA</u> 87:1668-1672 (1990)
CL	Uhlmann and Peyman, "Antisense Oligonucleotides: A New Therapeutic Principle," <u>Chemical Reviews</u> 90:544 (1990)
CM	Verheyden et al., "Synthesis of Some Pyrimidine 2'-Amino-2'-deoxynucleosides," <u>J. Org. Chem.</u> 36:250-254 (1971)
CN	Williams et al., "Properties of 2'-Fluorothymidine-Containing Oligonucleotides: Interaction with Restriction Endonuclease EcoRV," <u>Biochemistry</u> 30:4001-4009 (1991)
CO	Wu et al., "Convenient Procedure for the Preparation of Specific Mixed DNA-RNA Polymers," <u>J. Am. Chem. Soc.</u> 111:8531-8533 (1991)
CP	Yang et al., "Minimum Ribonucleotide Requirement for Catalysis by the RNA Hammerhead Domain," <u>Biochemistry</u> 31:5005 (1992)
CQ	Yang et al., "Mixed DNA/RNA Polymers Are Cleaved by the Hammerhead Ribozyme," <u>Biochemistry</u> 29:1156 (1990)
CR	Zaug et al., "Sequence-Specific Endoribonuclease Activity of the <i>Tetrahymena</i> Ribozyme: Enhanced Cleavage of Certain Oligonucleotide Substrates That Form Mismatched Ribozyme-Substrate Complexes," <u>Biochemistry</u> 27:8924-8931 (1988)
CS	Zaug and Cech, "The Intervening Sequence RNA of <i>Tetrahymena</i> Is a Enzyme," <u>Science</u> 231:470-475 (1986)
CT	Zaug et al., "The <i>Tetrahymena</i> Ribozyme Acts Like an RNA Restriction Endonuclease," <u>Nature</u> 324:429-434 (1986)
CU	Zaug et al., "The <i>Tetrahymena</i> intervening sequence ribonucleic acid enzyme is a phosphotransferase and an acid phosphatase," <u>Biochemistry</u> 25:4478-4482 (1986)
CV	Zaug et al., "A Labile Phosphodiester Bond at the Ligation Junction in a Circular Intervening Sequence RNA," <u>Science</u> 224:574-578 (1984)

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